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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/967,009 | 09/28/2001 | Ashok N. Rudrapatna | 21-1 | 5654 |

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EXAMINER

BAKER, STEPHEN M

ART UNIT PAPER NUMBER

2133

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/967,009

Applicant(s)

RUDRAPATNA ET AL.

Examiner

Stephen M. Baker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>040705</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show a means for Chase combining and/or IR combining in FIGs. 3 and 4 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

On page 11, in lines 1-2, the FIG. 3 embodiment is apparently incorrectly described as providing independent CRC error checking on the two streams multiplexed together, while it is apparently that only one CRC error check can be made on the two multiplexed streams.

On page 3, in line 11, "constitutes" apparently should be "constitute".

On page 12, in line 17, "streams" apparently should be "stream".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 3-9 and 14-21 are rejected under 35 U.S.C. 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed. Evidence of concealment of the best mode is based upon a lack of a disclosure detailing how Chase decoding and IR decoding can be combined in a single embodiment.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 3-9 and 14-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 3, 14, 16, 19 and 21: "and/or" apparently should be "or", however the Chase and IR alternatives are not viewed as functional equivalents and thus should be claimed separately.

In claims 15, 16 and 21: CRC checking on a combined packet apparently contradicts the "independent error detection" required by claim 10.

In claim 17: sending a confirmation message based on error checking the combination of the two streams apparently contradicts the "independent error detection" required by claim 10.

In claim 18: "the Incremental Redundancy function causes cyclic redundancy checking of the failure ..." is incomprehensible.

In claim 19: "checking an" apparently should be "checking on"; CRC checking on a combined packet apparently contradicts the "independent error detection" required by claim 10.

In claim 20: "the Chase function causes cyclic redundancy checking of the failure ..." is incomprehensible.

Claim Rejections - 35 USC § 102

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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8. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0027956 to Lee *et al* (hereafter Lee).

Lee discloses a wireless data transmission arrangement including transmitter circuitry (FIG. 6) comprising a pair of turbo code encoders (504, 512) for "forming separately at least two error control coded streams" from a "block of information". Separate antennas (path1, path2) are used by Lee's transmitter to transmit the respective "error control coded streams". Lee's data transmission arrangement further uses an ARQ protocol, and therefor transmits this data in response to a "confirmation message" of the ARQ protocol.

9. Claims 1 and 3-9 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Pub. No. 2003/0072285 to Onggosanusi *et al* (hereafter Onggosanusi).

Onggosanusi discloses a MIMO hybrid-ARQ system with Chase packet error correction decoding or Incremental Redundancy sub-packet error correction decoding. Onggosanusi shows (FIG. 1) transmitter circuitry including a plurality of transmission antennas (1, 2, ..., p) for transmitting a plurality of "streams" as the next block "sub-packet" or "packet" in response to a "confirmation message" (ACK) of a preceding block. Spreading units (108) form transmission streams separately, and the transmission streams so formed are "error control coded" streams, so it can be said that Onggosanusi shows "forming separately at least two error control coded streams from the block of information".

Regarding claim 9, the system disclosed by Onggosanusi can be considered a "one-to-many" communication system" as a single base station typically communicates with several mobile units.

10. Claims 1, 3, 4 and 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,771,705 to Kenney *et al* (hereafter Kenney).

Kenney discloses a wireless data transmission arrangement including transmitter circuitry (FIG. 2) comprising a pair of turbo code component encoders (201, 204) for "forming separately at least two error control coded streams" from a "block of information". Separate antennas (113, 114) are used by Kenney's transmitter to transmit the respective "error control coded streams". Kenney's data transmission arrangement further uses a hybrid ARQ protocol with incremental redundancy (col. 7, lines 26+), and therefor transmits this data in response to a "confirmation message" of the ARQ protocol.

Regarding claim 9, the system disclosed by Kenney can be considered a "one-to-many" communication system" as a single base station typically communicates with several mobile units.

11. Claims 10-21 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,909,758 to Ramesh *et al* (hereafter Ramesh).

Ramesh discloses a wireless data transmission arrangement of a "multiple antenna system" including a transmitter that separately forms two error control coded streams (col. 7, lines 11+) and a receiver that "performs independent error detection of at least two of the received error control coded streams", using a CRC decoding (col. 8,

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lines 24+) and returns a negative "confirmation message" (NACK) to the transmitter when decoding is not successful.

Regarding claim 14, the system disclosed by Ramesh uses incremental redundancy.

Response to Arguments

12. Applicant's arguments filed 28 April 2005 have been fully considered but they are not persuasive.

The examiner does not agree with applicant that "forming separately at least two error control coded streams" requires separate error control code encoders, as "forming" may refer directly to "streams". If applicant's arguments require two encoders, then applicants claims should require the same.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (571) 272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Stephen M. Baker
Primary Examiner
Art Unit 2133

smb